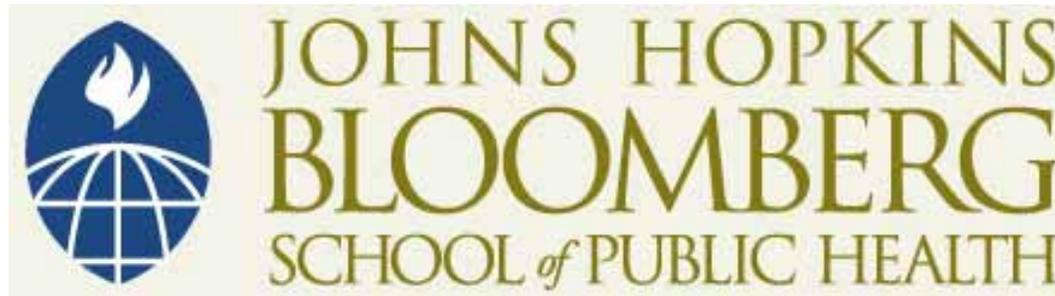


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En 570.498 & IH 221.629

Engineering Aspects of Public Health Crises

Quiz 1: Nov.17th

a:

1 c

2 d

3 b

4 c

5 d

6 b

7 c

8 e

9 e

10 d

11 any 2

Interaction with malnutrition

They studied cholera & typhoid – very water borne

Pathogens are different or less waterborne

Conditions are so bad (many more routes of transmission)

12 any 2

Sticks and other things being put in

Population estimates are wrong

Average family is unusually big

There are so many families per latrine (3.5 now) that they fill-up very quickly and the feces cannot digest.

13

5,000,000 liters/day / 300,000 people = 16.7 l/p/d, yes, it is above the 15l/p/d standard

14 and 1

Very waterborne outbreak (known to be waterborne or a pathogen like cholera, typhoid, Hep. E....)

If people could bath in surface water or there was plentiful rainwater so that people could wash with water “not provided”

15 any 2 Small children most often have the most deadly feces.
They spread it anywhere
Can have high pathogen load per gram
People perceive it to be relatively harmless

b:

1 e

2 b

3 b

4 a

5 d

6 c

7 c

8 e

9 b

10 a

11 any 1 These pathogens have to be transmitted in water
Water supplies change behaviors that effect transmission of these diseases
Food, flies, hands cannot influence this disease
These are diseases that can be addressed easily via education with water because the transmission processes are so specific
If people can be made to avoid surface water these transmission cycles can be broken.

12 any 2 Sticks and other things being put in
Population estimates are wrong
Average family is unusually big
There are so many families per latrine (3.5 now) that they fill-up very quickly and the feces cannot digest.

- 13 $3,000,000 \text{ l/d} / 250,000 \text{ people} = 12 \text{ l/p/d}$ No this is not 15 l/p/d
- 14 any 2 mentioned
- 15 any 2 West learned lessons with Cholera and Typhoid which were very waterborne

Interaction with malnutrition

Pathogens are different or less waterborne

Conditions are so bad (many more routes of transmission)

Easier to make profits, manage projects focused on water plants